

16 A Dialogic Turn in Research on Learning and Teaching to Comprehend

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[Understanding a paragraph] consists in selecting the right elements of the situation and putting them together in the right relations, and also with the right amount of weight or influence or force for each. The mind is assailed as it were by every word in the paragraph. It must select, repress, soften, emphasize, correlate and organize, all under the influence of the right mental set or purpose or demand.

(Thorndike, 1917, p. 431)

Comprehending is a dynamic and context sensitive process. The RAND Reading Study Group (2002) defined reading comprehension as “the process of simultaneously extracting and constructing meaning” (p. 11) that involves an interplay between the knowledge and capabilities of the reader, the demands of the text, the activities engaged in by the reader, and the sociocultural context in which reading occurs. By this account, the product of comprehension—meaning—is not stable. Changing one element, for example, by increasing the knowledge or motivation of the reader, altering the text, or asking the reader a question, changes the interaction between the reader, text, and activity and hence the meaning the reader constructs (cf. Harrison, 2004). It is not too farfetched to say that the product of comprehension changes day-by-day, hour-by-hour, and moment-by-moment (Pearson, 2001).

This view of comprehension has considerable precedent. It is reminiscent of Thorndike’s (1917) view of understanding espoused in the quotation at the beginning of this chapter. It is compatible with Spiro’s (2001) cognitive flexibility theory as applied to the learning and teaching of reading. According to Spiro, skilled readers need to be flexible and adaptive in their interactions with text to construct an understanding that is responsive to the needs of a new situation and demands of a new text. It is also compatible with Kintsch’s (1998) construction-integration model of comprehension. According to Kintsch, skilled readers comprehend text by constructing a representation of the words and ideas and their interrelations (the text base), and integrating this information with relevant prior knowledge and goals (the knowledge base) to form an understanding of the text (the situation model). By this account, knowledge construction and understanding are dynamic, constantly fluctuating phenomena. The reader’s prior knowledge informs the construction of the text base and the interconnections with the situation model, and the new knowledge acquired becomes part of the reader’s long-term store of knowledge for use in new situations for understanding new texts. In Pearson’s (2006) words, “knowledge begets comprehension begets knowledge.”

Despite considerable precedent for this view of reading comprehension, the report of the National Reading Panel (National Institute of Child Health and Human Development [NICHD], 2000) did little to advance a perspective on comprehension as a dynamic and context sensitive process. The report focused on text and reader variables as the sole sources of variability in the comprehension process. Under the heading of comprehension instruction, the report listed seven comprehension strategies that members of the panel identified as having adequate research

support—comprehension monitoring, cooperative learning (though this is a teaching strategy, not a cognitive process), constructing graphic and semantic organizers, question answering, question generation, using story structure, and summarizing—the implication being that good teaching of comprehension involved teaching these seven strategies (Pressley, 2006). Hence, the impression created by the report was that comprehension and comprehension instruction were relatively static, stable phenomena.

Prior reviews of research on comprehension instruction laid the foundation for the view of comprehension and comprehension instruction we advance in this chapter. Tierney and Cunningham (1984), writing in the first volume of the *Handbook of Reading Research*, anticipated some of the problems with the explicit teaching of comprehension. They expressed concerns about the mechanistic character of much comprehension strategies instruction and noted the goal of such instruction might be misdirected:

We have serious reservations about the degree to which many of the studies assume the worth of explicit teaching of strategies (Pearson & Gallagher, 1983). Teaching children our theories about how they think in order to get them to think better seems to us to be fraught with danger. It is true that we should be concerned with process, but to the extent that comprehension is like gardening, we must be more interested in the vegetables produced than the tools in the shed. Student understanding is more important than tacit or meta-understanding. (p. 634)

These concerns were echoed by Carver (1987), who argued that the efficacy of explicit teaching of strategies might be due simply to the increased amounts of time students spent reading, and by Resnick (1987), who argued that the construct validity of the strategies was not yet established (do good readers actually use discrete strategies?). Pearson and Dole (1987) raised concerns about what explicit strategy instruction might mean for the curriculum in terms of what should be taught to improve comprehension. All these writers questioned whether strategies actually helped students acquire the habits of mind to transfer to new texts and novel situations.

Pearson and Fielding (1991), writing in the second volume of the *Handbook*, reiterated some of these concerns. They noted that the danger with explicit instruction is that the explanations and self-reflections might “become more complicated than the task itself, leading to the possibility that students will become trapped in introspective nightmares” (p. 851). They go on to speculate that teachers might be able to eliminate the need for explicit instruction by focusing on the content of the text itself. Their review is noteworthy because it heralded the social turn in research and instruction in comprehension, noting the potential effects of peer interaction and dialogue on students’ comprehension and the benefits of giving students more responsibility for meaning making and more interpretive authority in discussions about text. This social turn was given emphasis in Kucan and Beck’s (1997) review of research on thinking aloud and reading comprehension in which they speculated that collaborative discussion might provide a new direction for research on teaching comprehension.

Pressley (2000b), writing in the third volume of the *Handbook*, took a more expansive approach to reviewing research on comprehension instruction. He noted that strategies instruction needed to be richer and more flexible to promote students’ self-regulated use of strategies. New to this review was coverage of research on transactional strategies instruction, a flexible, responsive approach to teaching strategies in the context of discussion to stimulate dialogue about text. Not long after, Gersten, Fuchs, Williams, and Baker (2001), in their review of research on teaching comprehension strategies to students with learning disabilities, documented the shift towards more flexible frameworks for comprehension instruction and the role of dialogue about text.

The purpose of the present chapter is to describe what we see as a dialogic turn in research on the learning and teaching of reading comprehension and to encourage those working in the field to think about the topic in a slightly new way. The focus is on comprehension instruction beyond the word level. We do not consider research on decoding and vocabulary, even though these are central enabling skills of comprehension (see Pressley, 2000b; Duke & Carlisle, this volume). Our thesis is that if comprehending is a dynamic, context sensitive process, then instruction needs to be more dynamic and flexible. In this chapter, we describe the current state of research on dialogic approaches to teaching comprehension that, we believe, offer more dynamic, flexible approaches to instruction.

Scholars use the term “dialogic” in a variety of ways. For some it means dialogue, for some it means giving students voice or agency, and for some it means collaborative inquiry among teachers and students and the co-construction of knowledge and understanding through dialogue. We use this term to denote all these things but, in particular, we use it according to Bakhtin (1981, 1986) to emphasize that the construction of meaning is a dynamic and relational process. In Bakhtin’s terms, language and the ideas it embodies are continually structured by heteroglossia—multiple voices that produce tension, sometimes conflict, within and between participants, as one voice “refracts” another (Nystrand, 1997). This tension arises from the juxtaposition of relative perspectives and helps shape discourse and understanding. In this sense of the term dialogic, the interaction among different voices is the foundation for comprehension; meaning emerges “when different perspectives are brought together in a way that allows them to inter-animate or ‘inter-illuminate’ each other” (Wegerif, 2006, p. 146).

We employed a two-pronged approach to locate literature for this review. First, we located all reviews of research on the topic of teaching reading comprehension. We conducted searches of the ERIC and PsycINFO databases using the subject identifier “reading comprehension” and the keywords “teaching” or “instruction,” limiting the search to literature reviews and meta-analyses that had been published in journals. We read the abstracts and selected relevant reviews, favoring those directly related to strategy instruction and those that were more recent. We read chapters on the topic in previous volumes of the *Handbook*, searched other edited books for review chapters, and located additional reviews that were cited in these sources. In total, we located over 60 reviews of research on teaching reading comprehension. Second, we conducted searches of ERIC and PsycINFO to locate articles reporting empirical studies of teaching reading comprehension that had been published since 1999 (to pick up where the previous *Handbook* chapter left off), again using the subject identifier “reading comprehension” and the keywords “teaching” or “instruction,” limiting the search to articles that had been published in journals. We independently read the abstracts and selected articles that were relevant to the present review: those that were empirical studies, involved students in grades K–12, and focused on teaching reading comprehension (rather than simply measuring reading comprehension as a dependent variable). Our percent agreement in identifying relevant articles was 85%. All disagreements were resolved through discussion. We also conducted targeted searches of articles by scholars whom we knew were conducting programs of research on the topic and talked with colleagues about relevant sources.

The structure of the chapter is as follows. First, we reprise the three waves of research on comprehension strategies instruction described by Pressley (1998). Studies published since 1999 are incorporated, as appropriate, to provide an update on this research. Second, we problematize comprehension strategies instruction. Third, we describe what might be characterized as the fourth wave of research on comprehension instruction—research on approaches that can be grouped under the heading of dialogic. This includes research on content-rich instruction, discussion, argumentation, and intertextuality. Fourth, we conclude by considering the implications for theory, research, and practice.

THREE WAVES OF RESEARCH ON COMPREHENSION STRATEGIES INSTRUCTION (WITH AN UPDATE)

Michael Pressley characterized research on teaching comprehension strategies in terms of three waves of studies. The best description of these three waves can be found in Pressley (1998). Similar accounts of the evolution of research on strategy instruction can be found in Pressley, Brown, El-Dinary, and Afflerbach (1995) and Pressley (2000a, 2000b, 2001, 2002a, 2002b, 2006).

First Wave: Single Strategy Instruction

The first wave of studies, conducted in the 1970s and early 1980s, focused on the effects of teaching students individual comprehension strategies. These were laboratory and classroom-based studies. Researchers taught students in an experimental group to use a strategy, while students in a comparison group received no instruction in the strategy. Researchers typically measured outcomes on experimenter-developed tests of comprehension specific to the texts employed in the studies. Results showed effects on comprehension in favor of students in the experimental groups and researchers interpreted these effects as evidence that students could be taught to use a strategy and that it benefited students' comprehension. Strategies shown to be effective in such studies included: activating prior knowledge, generating questions during reading, constructing mental images of the text, summarizing, and analyzing stories into story grammar components. These studies were reviewed by Tierney and Cunningham (1984), Pearson and Dole (1987), Haller, Child, and Walberg (1988), Pressley, Johnson, Symons, McGoldrick, and Kurita (1989), and Pearson and Fielding (1991).

Researchers have continued to investigate the effects of teaching students individual comprehension strategies. Since 1999, researchers have investigated the effects of teaching students strategies of main idea identification (Jitendra, Hoppes, & Xin, 2000), story theme identification (Wilder & Williams, 2001; Williams et al., 2002), self-regulation (Haddad et al., 2003), semantic mapping (Pappa, Zafiropoulou, & Metallidou, 2003), use of expository text structure (Hall, Sabey, & McClellan, 2005; Williams, 2005; Williams, Hall, & Lauer, 2004; Williams et al., 2005; Williams et al., 2007; Williams, Stafford, Lauer, Hall, & Pollini, 2009), and use of mental imagery (Joffe, Cain, & Maric, 2007). Most of these studies have targeted special populations of students who were at risk for academic failure or who were learning English as a second language.

Second Wave: Multiple Strategies Instruction

The second wave, conducted in the 1980s, focused on the effects of teaching students multiple strategies. The best-known instructional approach studied at this time was reciprocal teaching, an approach where teachers taught students to apply strategies of questioning, clarifying, summarizing, and predicting (Palincsar & Brown, 1984). During the second wave, the direct explanation approach to strategy instruction came to the fore (Duffy et al., 1987). Teachers explained to students in the experimental groups how to use a small repertoire of strategies, modeled the use of the strategies, and engaged students in guided and independent practice of the strategies. Students in the comparison groups did not receive strategy instruction. Results showed sizeable effects on experimenter-developed tests of comprehension and, sometimes, smaller but statistically significant effects on standardized tests of reading comprehension relative to students in the comparison groups. Researchers again interpreted these gains as evidence that students could be taught to use multiple strategies and that they produced fairly robust benefits for students' comprehension. These studies were reviewed by Pearson and Fielding (1991) and Rosenshine and Meister (1994).

Researchers have also continued to investigate the effects of teaching students small repertoires of strategies in a manner consistent with Pressley's second wave research. Most of the strategy instruction studies published since 1999 fall into this category. Many of the studies have investigated reciprocal teaching or some variant thereof (e.g., Johnson-Glenberg, 2000), and many have again targeted special populations of students such as those with disabilities (e.g., Faggella-Luby, Schumaker, & Deshler, 2007; Mastropieri et al., 2001) or those for whom English is a second language (e.g., Fung, Wilkinson, & Moore, 2003).

Noteworthy is a series of studies, dating back to 1996, conducted by Vaughn, Klingner, and colleagues evaluating the effectiveness of Collaborative Strategic Reading (CSR; Kim et al., 2006; Klingner & Vaughn, 1996, 2000; Klingner, Vaughn, Arguelles, Hughes, & Leftwich, 2004; Klingner, Vaughn, Hughes, & Arguelles, 1999; Klingner, Vaughn, & Schumm, 1998; Vaughn et al., 2000; Vaughn, Hughes, Schumm, & Klingner, 1998). CSR combines elements of reciprocal teaching and cooperative learning to help students with learning disabilities and English language learners in elementary school make sense of content-area texts. Teachers first model for the class how to use four comprehension strategies: brainstorming and predicting, monitoring understanding, identifying main ideas, and generating questions and reviewing key ideas. Students then engage in further modeling and practice. The students then employ the strategies while working in pairs or small, heterogeneous, peer-led groups. Students in groups are assigned different roles (e.g., leader, reporter) to foster cooperative work. CSR has also been combined with other reading instruction approaches to meet the diverse needs of students in middle school (Bryant, Ugel, Thompson, & Hamff, 1999; Bryant et al., 2000). As with the earlier second wave research, most studies of CSR and of other approaches to multiple strategy instruction have shown beneficial effects on experimenter-developed and standardized tests of reading comprehension.

Third Wave: Transactional Strategies Instruction

The third wave, which began in 1989, was a program of research that Pressley and his colleagues conducted focused on a more flexible approach to teaching students multiple strategies. Pressley and colleagues studied school-based, teacher-developed implementations of comprehension strategies instruction (e.g., Pressley et al., 1992) and developed an approach they called "transactional strategies instruction" (TSI), so called because it emphasized transactions between readers and text, transactions among participants (students and teacher), and joint construction of understanding. Students were taught, usually within the context of a content-rich curriculum, a small repertoire of strategies that typically included predicting based on prior knowledge, generating questions, clarifying confusions, constructing mental images, relating text content to prior knowledge, and summarizing. Brown, Pressley, Van Meter, and Schuder (1996) conducted a year-long, quasi-experimental study of the effects of TSI with low-achieving Grade 2 students. Results showed robust effects on experimenter-developed measures of strategy awareness, strategy use, and comprehension, as well as on standardized measures of reading achievement in favor of students receiving TSI.

Pressley regarded two other studies as providing evidence of the effects of strategy instruction that was consistent with the TSI approach. These were true experiments conducted by Collins (1991) with grades 5 and 6 students and by Anderson's (1992; see also Anderson & Roit, 1993) with middle school and high school students. Both studies also showed substantial effects on standardized measures of reading comprehension.

During the development and evaluation of TSI, evidence accrued in support of the validity of comprehension strategies. Wyatt et al. (1993) conducted a verbal protocol analysis of the reading of 15 skilled readers (professors from the University of Maryland) and Pressley and Afflerbach (1995) compiled a synthesis of results from over 40 verbal protocol studies in which readers

were asked to think aloud as they read. According to Pressley and Afflerbach, findings from the studies converged on the notion that skilled readers were “constructively responsive readers” and deployed a range of strategies fluidly, on a moment-to-moment basis, in response to the demands of the text, the needs of the situation, and their cognitive and metacognitive capabilities. Pressley et al. (1995) claimed that these strategies were the same ones that were taught in TSI. For those who believed the data from verbal protocol studies, these findings addressed the concerns of scholars who doubted the validity of comprehension strategies. Here was evidence that good readers used comprehension strategies.

We identified only two recent studies of TSI (some of the more dialogic approaches to comprehension instruction might also be considered examples of TSI, but we discuss these in a later section). Reutzel, Smith, and Fawson (2005) compared TSI with an approach to comprehension instruction where teachers taught a series of strategies one-at-a-time (single strategy instruction, SSI). This was a true experiment where 80 Grade 2 students were randomly assigned to the two treatments. Teachers taught students to use strategies with science information big books over a semester. Results showed no differences in comprehension between the TSI and SSI groups as measured by recall of main ideas from transfer passages and a norm-referenced, standardized test of comprehension. But there were significant and substantial differences in favor of the TSI students in recall of details from the transfer passages, performance on a curriculum-based test of comprehension, and science content knowledge. This is one of the few studies demonstrating the viability of multiple strategy instruction with children in the early grades (for reviews of strategy instruction in the early grades, see Pearson & Duke, 2002; Stahl, 2004). In another recent study of TSI, Hilden and Pressley (2007) conducted a case study of five middle school teachers as they participated in a yearlong professional development program in TSI. The authors documented the challenges and successes the teachers experienced as they encouraged students’ self-regulated use of comprehension strategies.

In summary, research on strategy instruction has evolved from laboratory and classroom-based studies of single-strategy instruction, to studies of the teaching small repertoires of strategies, to studies of teaching these repertoires in more flexible ways in more collaborative contexts. There is now no doubt that instruction in small repertoires of comprehension strategies, when implemented well, produces robust effects on measures of comprehension, including standardized tests (e.g., Anderson, 1992; Brown et al., 1996; Collins, 1991). This seems to be especially the case for students with learning disabilities (Gersten et al., 2001; see also Faggella-Luby & Deshler, 2008). What remain in doubt are why this happens, whether this instruction yields the generative, flexible comprehension students need, and whether the effects are sustainable in the classroom.

PROBLEMS WITH STRATEGIES INSTRUCTION

Why Does Teaching Strategies Improve Students’ Comprehension?

It is still not clear why teaching strategies improves students’ comprehension. As noted earlier, Pressley et al. (1995) argued that teaching strategies enabled students to emulate what skilled readers do and that the strategies were directly responsible for enhancing students’ comprehension. However, early in the development of strategy instruction, Resnick (1985) argued that the speed and automaticity with which skilled readers comprehend text made it unlikely that they deliberately devoted attention to asking questions, constructing summaries, and so on. Rosenshine and Meister’s (1994) review of research on reciprocal teaching cast further doubt on whether strategies were indeed directly related to comprehension. They found that students’ comprehension was generally the same regardless of the kinds and number of strategies taught

(see also Rosenshine, Meister, & Chapman, 1996). Moreover, among those studies that enabled researchers to study the ability of students to use one of the strategies, generating questions, they found no relationship between ability to use the strategy and students' reading comprehension. Sinatra, Brown, and Reynolds (2002) argued that the deliberate allocation of attention to strategies might even undermine students' comprehension because it diverts their cognitive resources away from understanding the text. They also pointed out that researchers were still hard pressed to identify the most effective strategies.

There are at least two alternative explanations for the effect of teaching strategies. One alternative explanation is that teaching strategies promotes students' active engagement with text. Kintsch and Kintsch (2005) noted that a feature of all strategies is that they promote the active construction of meaning during reading, and the linking of the text with reader's prior knowledge and experience (see also Willingham, 2007). Another alternative explanation is that strategies are vehicles that enable students to engage in dialogue about text. There are various perspectives on what the dialogue affords—a collaborative scaffold (Palincsar, 1986), a think aloud that enables students to learn from each other about the processes of constructing meaning (Kucan & Beck, 1997), or a means of giving students voice (Palincsar, 2006). The latter explanation and perspectives privilege the social rather than individual aspects of learning (see Gersten et al., 2001).

At the time of writing, we know of only two studies that directly address the issue of alternative explanations for the effects of strategy instruction. McKeown, Beck, and Blake (2009) compared multiple strategies instruction with a version of Questioning the Author (QtA), an approach that eschews the teaching of strategies in favor of having students focus on text content in response to general, meaning-based questions (Beck & McKeown, 2006; Beck, McKeown, Sandora, Kucan, & Worthy, 1996). McKeown and colleagues also included a control group that received instruction from a modified basal program. They conducted two experiments with fifth grade students in a low-performing school, using scripted instruction to standardize coverage of the texts. The first study was a quasi-experiment, and the second was a true experiment involving random assignment of students. Results showed significant differences between students in the two conditions in favor of QtA on open-ended or probed recall of instructed texts and marginal differences in favor of QtA on recall of transfer texts read without instructional support. However, performance of students in the QtA condition was not significantly greater than that of students in the basal control condition.

Garcia, Taylor, Pearson, Stahl, and Bauer (2007) conducted a quasi-experimental study comparing multiple strategies instruction with instruction that emphasized responsive engagement with text. The responsive engagement instruction drew on Saunders and Goldenberg's (1999) Instructional Conversations and incorporated additional features intended to promote high-level discussions of text. There was also a control group that received vocabulary instruction. The study involved students in grades 2/3 and 4/5 in 12 low-income schools in four sites. Results for grades 4/5 varied by site but overall showed no significant differences between students in the strategy and responsive engagement conditions in comprehension of an instructed text. A transfer text was used at one of the sites and results again showed no significant differences in comprehension between the strategy and responsive engagement groups. On both instructed and transfer passages, students in the two conditions significantly outperformed those in the control condition. Results for grades 2/3 also varied by site though they were more difficult to interpret.

Neither the McKeown et al. (2009) study nor the Garcia et al. (2007) study permits an unambiguous interpretation of the benefits of strategy instruction. Instructing students in strategies might be a way of promoting sustained, active engagement with the ideas in a text, and/or of fostering dialogue about the text. Nevertheless, the results of the two studies are compatible with

the notion that it is not the strategies *per se* that are responsible for improvement in students' comprehension.

Does Teaching Strategies Yield the Generative, Flexible Comprehension Students Need?

Another problem with strategies is that instruction can become too mechanical. Shortly after the first wave of strategy instruction research, scholars voiced concerns that strategies can become an end-point of instruction rather than a means to an end (Baker, 1994, 2002; Beck, McKeown, Hamilton, & Kucan, 1997; Brown & Campione, 1998; Moats, 2004; Paris & Winograd, 1990; Tierney & Cunningham, 1984).

These concerns were warranted because they have been realized. Hacker and Tenen (2002) noted the tendency of some teachers to overemphasize the four strategies of reciprocal teaching to the detriment of students' engagement in meaningful dialogue about text (see also, Coley, DePinto, Craig, & Gardner, 1993; Marks et al., 1993). Similarly, Reutzel et al. (2005) noted that teachers in their SSI condition tended to focus on learning and applying a strategy rather than focusing on it as a vehicle to acquire science content knowledge. Garcia et al. (2007) noticed that teachers who were taught to implement strategy instruction during a year of professional development tended to "get stuck," overemphasizing strategies even as they were to trying to foster students' more responsive engagement with text. The risk of instruction becoming too mechanical is that the interactions among teacher and students become highly structured to the point where they inhibit generative learning and students' flexible, self-regulated use of strategies (cf. Cohen, 1994; King, 1999).

Is the Teaching of Strategies Sustainable in the Classroom?

Yet another problem with strategies is that they are difficult for teachers to sustain in the classroom. Despite the wealth of evidence in support of the effectiveness of strategies, observations of reading and language arts instruction in elementary schools in different regions of the United States indicate that the teaching of strategies is not very common. Pressley, Wharton-McDonald, Mistretta-Hampton, and Echevarria (1998) observed language arts instruction in 10 fourth- and fifth-grade classrooms in upstate New York over a school year. They saw very little comprehension strategy instruction; what they saw instead was a great deal of comprehension assessment. More recently, Taylor, Pearson, Clark, and Walpole (2000) observed instruction in first- through third-grade classrooms in 14 high-poverty schools in Virginia, Minnesota, Colorado, and California and reported seeing little strategies instruction. Taylor, Pearson, Peterson, and Rodriguez (2003, 2005) also reported observing little strategy instruction in grades 1–5 in high-poverty schools in various parts of the United States. Connor, Morrison, and Petrella (2004), in a study of 43 third-grade classrooms in the Midwest, noted that teachers spent an average of less than 1 minute per day explicitly instructing strategies. These findings are all too reminiscent of Durkin's (1978/1979) finding that what masqueraded for comprehension instruction in the 1970s was little more than either oral or written comprehension quizzes.

A likely explanation for the apparent dearth of strategies instruction is that teachers find it hard to learn and hard to do. Pressley, Goodchild, Fleet, Zajchowski, and Evans (1989) and Deshler and Schumaker (1993) argued that strategy instruction posed many challenges for teachers. El-Dinary and Schuder (1993) provided empirical support for this argument, documenting the difficulties experienced by seven teachers as they attempted to become TSI teachers. They reported that by the end of the year, only two of the seven teachers were committed to comprehension strategies instruction (see also El-Dinary, 1994, 2002; Pressley & El-Dinary, 1997). Similarly, Brown and Coy-Ogan (1993) and Duffy (1993) documented that learning to teach strategies required a long-term commitment from teachers.

Recent studies have confirmed the challenges strategy instruction poses for teachers of reading (Hilden & Pressley, 2007; Klingner et al., 2004; Klingner et al., 1999; Mason, 2004; Taylor et al., 2005). All of these recent studies have shown that teaching strategies can take several years for teachers to learn to do well, requires considerable amount of classroom time, and may conflict with teachers' prior beliefs and practices.

DIALOGIC APPROACHES TO LEARNING AND TEACHING TO COMPREHEND: THE FOURTH WAVE

The fourth wave of research on comprehension instruction emphasizes approaches that might be grouped under the heading of dialogic. The dialogic turn in research on learning and teaching to comprehend was motivated, in part, by the concerns about strategies instruction outlined above and by the recognition that comprehension was a more fluid, context sensitive process that required more a dynamic, flexible approach to instruction. In this section, we review research on four such approaches: content-rich instruction, discussion, argumentation, and intertextuality. We characterize research on these more dialogic approaches as the 'fourth wave' of research on comprehension instruction.

Pressley's third wave of studies of TSI and the attendant theory of constructively responsive reading probably set the stage for these more dialogic approaches to learning and teaching of reading comprehension. Pressley and Afflerbach's (1995) review of verbal protocol studies revealed that comprehension was an active, moment-by-moment process affected by complex interactions among an array factors. Such a view of comprehension necessitated a more complex view of teaching (Pressley et al. 1995). In TSI, there is an emphasis on dialogue, on giving students more control over their own learning, and on collaborative inquiry as a mean of constructing knowledge and understanding. These features are also found in the approaches considered in the fourth wave. However, what is key to these more dialogic approaches is the juxtaposition of relative perspectives or discourses that gives rise to tension and sometimes conflict among different voices. From a dialogic perspective, it is from the interaction and struggle among different, even competing, voices that meaning and understanding emerge.

Content-Rich Instruction

In recent years, there has been increasing interest in studies of strategy instruction embedded within specific content domains such as science or social studies to promote comprehension. The National Reading Panel (NICHD, 2000) referred to such studies as "curriculum-plus-strategies" studies, noting that they constituted a promising line of inquiry. Recent research in this area is marked by a high degree of integration of strategy instruction and subject-matter teaching and the richness of the subject-matter content. One rationale for bringing together these two endeavors is that strategies provide the tools to help students make sense of the content, and the content gives meaning and purpose to the strategies—in other words, the two inter-animate or inter-illuminate each other. The strategies might be content general, applicable in a range of contexts, or they might be specific to the demands of the domain in which students are working.

One program of research that exemplifies this trend is research on Concept-Oriented Reading Instruction (CORI; Guthrie, Wigfield, & Perencevich, 2004). CORI is an instructional program to develop upper elementary students' comprehension, motivation for reading, and understanding of science (see <http://www.cori.umd.edu/>). It involves teaching the comprehension strategies of activating background knowledge, questioning, searching for information, summarizing, and organizing information graphically. These strategies are taught in the usual sequence of modeling, scaffolding, and guided and independent practice. What is key to CORI is that strategies are

taught within a rich context of collaborative inquiry in science, where students establish knowledge goals and make real-world connections through hands-on experiences and other activities. This context, in combination with other instructional features, provides the impetus for students' development of strategies and motivation. Research on CORI began with Guthrie et al.'s (1996) demonstration that CORI enhanced third and fifth graders' literacy engagement and motivation over the course of one year. Since then, Guthrie and colleagues have conducted 10 quasi-experimental studies comparing the effects of CORI with those of traditional instruction and more conventional strategy instruction with students in grades 3, 4, and 5 (e.g., Guthrie, Anderson, Alao, & Rinehart, 1999; Guthrie et al., 1998; Guthrie et al., 1996; Guthrie, Wigfield, Barbosa et al., 2004; Guthrie et al., 2006; Guthrie, Wigfield, & VonSecker, 2000; Wigfield, Guthrie, Tonks, & Perencevich, 2004). In a meta-analysis of these studies, Guthrie, McRae, and Klauda (2007) reported mean effects sizes in favor of CORI ranging from 0.65 to 0.93 on researcher-developed tests of comprehension and 0.91 on standardized tests of comprehension. The meta-analysis also showed mean effect sizes of 1.34 on measures of students' science knowledge and of 1.00 and 1.20 on measures of students' motivation for reading.

Another program of research in this area is research on In-Depth Expanded Application of Science (IDEAS; Romance & Vitale, 1992, 2001). The IDEAS model embeds reading and language arts instruction within a daily 2-hour block of in-depth science concept instruction. The assumption is that, by contextualizing reading and language arts instruction within the knowledge-building activities of science, students' learning of reading comprehension skills and strategies (e.g., concept mapping, relating new knowledge to prior knowledge) is more meaningful and purposeful. Romance and Vitale (2001) summarized the results of four quasi-experimental studies comparing the effects of IDEAS with those of traditional instruction with students in grades 2 through 5. Results of most studies showed significantly greater performance in comprehension as measured by standardized tests, as well as greater performance in science achievement and more positive attitudes towards reading and science.

Research on Reading Apprenticeship by Greenleaf, Schoenbach, and colleagues (Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Jordan, Jensen, & Greenleaf, 2001; Jordan & Schoenbach, 2003; Schoenbach, Braunger, Greenleaf, & Litman, 2003; Schoenbach & Greenleaf, 2000) provides insight into what content-rich strategy instruction might look like in middle and high schools. Reading Apprenticeship is an instructional framework in which teachers apprentice students into reading by serving as a "master" reader of subject-area texts in science, social studies, math, or English (Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). Teachers model their own strategies for reading and making sense of challenging texts in their disciplines and give students opportunities for guided and independent practices in using the strategies embedded in authentic content-area reading experiences. An important feature of the model is the use of "metacognitive conversations" in which teachers and students make visible their discipline-based comprehension strategies and processes in group discussions and other collaborative learning environments. In a single-group pretest-posttest design study, Greenleaf and Mueller (2003) showed that ninth-grade students who engaged in an academic literacy course based on Reading Apprenticeship made greater than expected gains over a school year on a standardized test of reading comprehension. A large-scale, randomized control trial conducted as part of an evaluation by the U.S. Institute of Education Sciences (Corrin, Somers, Kemple, Nelson, & Sepanik, 2008; Kemple et al., 2008), showed that a similar yearlong course in academic literacy, used as a supplementary literacy program for struggling ninth-grade readers, produced small but statistically significant benefits relative to a control condition on standardized tests of students' reading comprehension, at least in schools with high levels of program implementation. It should be noted that none of these studies provides a direct test of Reading Apprenticeship embedded in the teaching of specific subject-areas, but they do provide support for the general instructional framework.

These and other programs of research (see the work on integrating science and literacy instruction by Hapgood, Magnusson, & Palincsar, 2004; and Palincsar & Magnusson, 2001; on *Seeds of Science/Roots of Reading* by Pearson and Barber at <http://seedsofscience.org>; and the edited collection of papers in Saul, 2004) attest to the benefits of bringing strategy instruction, and comprehension instruction in general, into dialogic relationship with subject-matter teaching. This research highlights the benefits of content-rich instruction for both students' reading comprehension and content knowledge.

As is evident in the research reviewed, most studies in this area have been conducted in elementary school. A challenge for future research is learning how to help teachers integrate comprehension instruction into content-area teaching in middle and high schools where the subject-matter demands are more complex (Conley, 2008). The work of Greenleaf, Schoenbach, and colleagues (e.g., Greenleaf et al., 2001) on Reading Apprenticeship provides some direction in this regard. Another program of research in this area is the work of Deshler, Schumaker, and colleagues (e.g., Deshler & Schumaker, 2006; Hock, Brasseur, & Deshler, 2008) on the Strategic Instruction Model designed to help middle and high school students with learning disabilities comprehend complex content in their subject-matter classes. More research in this area is needed.

Discussion

Research on the role of classroom discussion as means of promoting reading comprehension is not new; it has been the subject of investigation since the early 1960s. What is new is the level of attention being paid to the effects of discussion on students' comprehension and the proliferation of approaches to conducting high-quality discussions about text. There are now a large number of discourse-intensive pedagogies that disrupt the I-R-E (Initiation-Response-Evaluation) pattern of traditional classroom discourse in favor of more open-ended, collaborative exchanges of ideas among participants for the purpose of improving students' understanding and interpretation of texts.

The theory underlying the use of discussions to improve comprehension derives from cognitive, sociocognitive, sociocultural, and dialogic perspectives on learning and teaching. From a cognitive perspective, discussion promotes active engagement in making meaning from a text (McKeown et al., 2009). From a sociocognitive perspective, discussion enables students to make public their perspectives on issues arising from the text, consider alternative perspectives proposed by peers, and attempt to reconcile conflicts among opposing points of view (Almasi, 1995). From a sociocultural perspective, discussion enables students to co-construct knowledge and understandings about the text and internalize ways of thinking that foster the knowledge, skills, and dispositions needed to transfer to the reading of new texts (Wells, 2007). And from a dialogic perspective, the tension and conflict between relative perspectives and competing voices in discussion about a text helps shape the discourse and students' comprehension (Nystrand, 2006).

The major approaches to conducting discussion can be distinguished in terms of the degree of control exerted by the teacher versus the students and the dominant stance toward the text (cf. Chinn, Anderson, & Waggoner, 2001). The degree of control exerted by the teacher versus the students depends on who has control of the topic of discussion, who has interpretive authority, who controls the turns, and who chooses the text. The dominant stance toward the text depends largely on the teacher's goals for the discussion and can be categorized in terms of an aesthetic, efferent, or critical-analytic stance. An aesthetic, or more appropriately expressive (see Soter, Wilkinson, Connors, Murphy, & Shen, 2010), stance refers to a reader-focused response to the text. In this stance, the discussion gives prominence to the reader's affective response to the text, to the readers' spontaneous, emotive connection to all aspects of the textual experience (Rosen-

blatt, 1978). An efferent stance refers to a more text-focused response in which the discussion gives prominence to reading to acquire and retrieve information. The focus is on “the ideas, information, directions, conclusions to be retained, used, or acted on after the reading event” (Rosenblatt, 1978, p. 27). A critical-analytic stance refers to a more objective, critical response in which the discussion gives prominence to interrogating or querying the text in search of the underlying arguments, assumptions, worldviews, or beliefs (cf. Wade, Thompson, & Watkins, 1994).

These two dimensions of text-based discussions—degree of control exerted by the teacher versus the students and the dominant stance toward the text—are related (Wilkinson & Reninger, 2005). Discussions in which students have the greatest control tend to be those that give prominence to an aesthetic or expressive stance toward the text. These approaches include Book Club (Raphael & McMahon, 1994), Grand Conversations (Eeds & Wells, 1989), and Literature Circles (Short & Pierce, 1990). Conversely, discussions in which teachers have the greatest control tend to be those that give prominence to an efferent stance. These approaches include Instructional Conversations (Goldenberg, 1992/1993), Questioning the Author (Beck & McKeown, 2006; Beck et al., 1997), and Junior Great Books Shared Inquiry (Great Book Foundation, 1987). Discussions in which students and teachers share control tend to give prominence to a critical-analytic stance. In these approaches, the teacher has considerable control over text and topic, but students have considerable interpretive authority and control of turns. Approaches that fall into this category include Collaborative Reasoning (Anderson, Chinn, Chang, Waggoner, & Nguyen, 1998), Paideia Seminars (Billings & Fitzgerald, 2002), and Philosophy for Children (Sharp, 1995).

There are other approaches to text-based discussion although they are less easy to categorize, in part because there is less research on them. These other approaches include Conversational Discussion Groups (O’Flahavan, 1989), Dialogical-Thinking Reading Lessons (Commeyras, 1993), Idea Circles (Guthrie & McCann, 1996), and Point-Counterpoint (Rogers, 1990). There are also various instantiations of literature discussion groups based on reader-response theory (see Gambrell & Almasi, 1996), discussion-based envisionments of literature (Langer, 1993; 1995, 2001), and instructional integrations of writing, reading, and talk (Nystrand, Gamoran, & Carbonaro, 2001; Sperling & Woodlief, 1997).

Evidence on the role of discussion in improving students’ comprehension comes from correlational, single-group, and multiple-group design studies. Nystrand and Gamoran (Gamoran & Nystrand, 1991; Nystrand, 1997; Nystrand & Gamoran, 1991) conducted possibly the largest correlational study ever of the relationship between discussion and students’ comprehension. They observed the instructional practices in 58 eighth-grade and 54 ninth-grade language arts and English classes in eight midwestern communities in the United States. They observed each class four times a year and assessed students understanding and interpretation of literature at the end of each year, collecting data on over 1,895 students. Their results indicated that features of whole-class discussion were positively related to students’ reading comprehension, as measured by both recall and depth of understanding, as well as response to aesthetic aspects of literature. These features included sustained, open exchange of ideas among students; teachers asking authentic questions (i.e., questions where the answer was not prespecified), provided they were related to the literature under discussion; and uptake (i.e., questions where the teacher incorporated and built on students’ comments). Nystrand (1997, 2006) argued out that these features of discourse served an epistemic role in discussion by giving students more voice and agency in construction of their learning and understanding.

These results were largely replicated in a follow-up correlational study by Applebee, Langer, Nystrand, and Gamoran (2003) of 974 students in 64 middle and high school English classrooms. Their results confirmed that open discussion, authentic questions, and uptake, used in the context of academically challenging tasks, were positively related to students’ reading comprehension and literature achievement.

Similar results have been reported in other correlational studies. Langer (2001) studied the instructional practices associated with student achievement in 25 middle and high schools, involving 44 teachers and 88 classes. This was a nested, multiple-case design comparing practices in schools with higher-than-expected achievement in literacy with those in more typically performing schools; hence it was essentially a causal-comparative study. Langer found that whole-class and small-group discussion was one of the characteristics of instruction in the higher-performing schools. Taylor et al.'s (2000) observational study was similar in design in that they compared the instructional practices of first- through third-grade teachers in 14 schools categorized as most, moderately, or least effective in promoting student reading achievement. They showed that asking higher-level, aesthetic-response questions in discussions about text was a feature of instruction of the most accomplished teachers and teachers in the most effective schools (see also, Taylor, Pearson, Clark, & Walpole, 1999). In subsequent school change work, to promote the cognitive engagement of students in grades 1-5 in diverse array of high-poverty schools, Taylor et al. (2002, 2003, 2005) again found that higher-level questions predicted students' end-of-year achievement in reading (though not always in comprehension).

Murphy, Wilkinson, Soter, Hennessey, and Alexander (2009) conducted a meta-analysis of 42 single-group and multiple-group studies that examined the effects of different approaches to text-based discussions on measures of teacher and student talk and individual student comprehension and learning outcomes. Results showed that the approaches were differentially effective in promoting comprehension. Many of the approaches were effective at promoting students' literal and inferential comprehension especially those that had a more efferent stance toward the text, namely Questioning the Author, Instructional Conversations, and Junior Great Books Shared Inquiry. Some of the approaches were particularly effective at promoting students' critical-thinking, reasoning, and argumentation about text, namely Collaborative Reasoning and Junior Great Books Shared Inquiry. Only a small number of studies documented effects of discussion on standardized measures using multiple-group designs. Among these studies, Lipman (1975) reported the strongest effect on students' comprehension after three years of instruction with Philosophy for Children, producing an effect size of 0.55 on the Iowa Test of Basic Skills. The effect sizes for the other studies averaged approximately 0.20. Another finding from Murphy et al.'s meta-analysis was that increases in student talk did not necessarily result in concomitant increases in student comprehension. Rather, a particular kind of talk was necessary to promote comprehension. This is consistent with observations from other research that the success of discussion hinges not on increasing the amount of student talk per se, but in enhancing the quality of the talk (Wells, 1989). Results of the meta-analysis also suggested that the approaches exhibited greater effects for students of below-average ability than for students of average or above-average ability.

An important finding from the body of research on text-based discussions is that discussion can benefit English Language Learners (ELLs). Saunders and Goldenberg (1999) conducted an experimental study of the effects of Instructional Conversations in combination with literature logs on 116 fourth and fifth grade ELL and English-proficient students. Results showed both ELL and English-proficient students who participated in the Instructional Conversations + Literature Logs condition scored significantly higher in literal and inferential comprehension of narrative texts than did students in other conditions (literature logs only, Instructional Conversations only, and a reading plus study control condition). The ELL students in the Instructional Conversations + Literature Logs condition also scored significantly higher on measures of theme explanation and exemplification than did students in the other conditions. Other studies have shown similar effects of discussions for ELL students (see Nystrand, 2006).

Although there is a convergence of theory and data suggesting that high-quality discussions can improve students' comprehension, more research is necessary. Much of the research involves correlational and single-group pretest-posttest designs, and uses indices of discourse

as proxy measures of comprehension. More experimental and quasi-experimental studies are needed that include individual outcome measures of students' comprehension. It is especially important to assess students' comprehension of texts outside of the discussion to gauge whether students acquire the habits of mind to transfer their abilities to new texts and novel situations. Another limitation of research in this area is that the bulk of studies have focused on discussions of literary texts. It is important to examine the conduct and effects of high-quality discussions with informational texts in the content areas.

Argumentation

Studies of argumentation about issues raised by text might be considered a subset of research on discussion but we believe such studies warrant special attention because they have an explicit focus on teaching the knowledge and skills of argumentation. Research on learning and teaching to argue has a rich intellectual tradition especially in science education (see Chinn, 2006). Argumentation is "discourse in which learners take positions, give reasons and evidence for their positions, and present counterarguments to each other's ideas when they have different views" (Chinn, 2006, p. 355). Hence, by definition, almost all research on argumentation as an instructional tool can be categorized as dialogic. The studies of argumentation reviewed in this section also exemplify the dialogic turn in research on learning and teaching of reading comprehension in that argumentation is embedded in the context of discussions about and around text and/or within content-rich instruction.

Argumentation is an explicit feature of the Collaborative Reasoning approach to discussion mentioned in the previous section. Anderson and colleagues believe that knowing the form and function of an argument is important for readers if they are to adopt a critical-analytic stance toward text (Reznitskaya & Anderson, 2002). In Collaborative Reasoning, students are encouraged to take a position on an issue, support it with reasons and evidence from the text, and challenge other students with counterarguments and rebuttals. These rhetorical moves can be broken down into a number of "argument stratagems" that provide the building block for an "argument schema" that students internalize as they participate in the discussions. Support for this theory comes from a study by Anderson et al. (2001) in which they showed that, once a student successfully used a particular argument stratagem, other students in the group adopted it for use in their arguments in a process of social propagation that Anderson and colleagues called the *snowball phenomenon*. Moreover, Anderson and colleagues have shown that once students internalize the argument schema from oral group discussions, they are able demonstrate transfer to written argumentation performed individually and independently. In a number of quasi-experimental studies with fourth and fifth-grade students, they showed that students who participated in anywhere from 4 to 10 Collaborative Reasoning discussions wrote persuasive essays that contained a greater number of arguments, counterarguments, and rebuttals than essays of students in control conditions who received regular classroom reading instruction (Dong, Anderson, Kim, & Li, 2008; Kim, 2001; Reznitskaya, Anderson, & Kuo, 2007; Reznitskaya et al., 2001). The magnitude of the effects on the total number of argument components in the persuasive essays was moderate to large with effect sizes ranging from 0.45 to 0.68 (Reznitskaya et al., 2008).

Another approach to classroom talk that foregrounds skills of argumentation is Accountable Talk. Developed by Resnick and colleagues (Michaels, O'Connor, & Resnick, 2008; Michaels, O'Connor, Hall, & Resnick, 2002; Resnick, 1999; Resnick & Hall, 1998), Accountable Talk is an approach to conducting academically productive classroom talk across a range of content areas. It is premised on the Vygotskian notion that talk and social interaction are fundamental to learning (Wertsch, 1991) and that particular forms and norms of discourse are needed to promote learning in academic contexts. Resnick and colleagues argue that, for classroom

talk to promote learning, it must be accountable—to the learning community, to accurate and appropriate knowledge, and to standards of reasoning. In other words, it must be responsive to and build on what others have said; it must have a basis in evidence from text or other sources; and it must follow the norms of good reasoning. When students engage in Accountable Talk, they consider each other's ideas and collectively explore a topic, challenge each other's ideas and opinions, and provide reasons and evidence to support their claims and arguments. Empirical studies suggest that it has potential for promoting reading comprehension (Matsumura et al., 2006; Wolf, Crosson, & Resnick, 2005) although, at the time of writing, we know of no studies that provide a direct test of the impact of Accountable Talk on students' comprehension.

Argumentation has been much studied as means of promoting conceptual change in science. Syntheses of research from both reading education and science education suggest that an effective approach to changing students' alternative conceptions is by reading and discussing refutational expository text, preferably under teacher guidance, in ways that promote cognitive conflict (Guzzetti, 2000; Guzzetti, Snyder, Glass, & Gamas, 1993). Discussion is key to the benefits of this approach because it encourages students to support their views with evidence from the text. Noteworthy is the Discussion Web (Alvermann, Hynd, & Qian, 1995), a technique in which students, under guidance of the teacher and using a graphic aid, are encouraged to choose positions on an issue, list reasons for their positions, and support their opinions with evidence.

Argumentation is also fundamental to the process of scientific inquiry (Duschl & Osborne, 2002). Students need to learn how to seek evidence and reasons for the ideas or knowledge claims that they draw from experimentation in science. Hand and colleagues have developed an approach to teaching scientific argument through the use of what they call the Science Writing Heuristic (SWH; Burke, Greenbowe, & Hand, 2006; Hand, 2007). The SWH is an instructional framework to guide students' discussions, thinking, and writing in science in ways that parallel the discussions, reasoning, and writing of "real" scientists. The development of argumentation is embedded within science inquiry processes where students learn to make claim, provide evidence to support their claims, and reflect on how their ideas change. In a number of experimental studies of various configurations of the SWH in different fields of science (e.g., chemistry, biology), Hand and colleagues have shown that students across a range of ages produced science texts showing greater evidence of argumentation and the language of science than found in texts of students who received traditional science instruction (Akkus, Gunel, & Hand, 2007; Hand, Prain, Lawrence, & Yore, 1999; Hand, Wallace, & Yang, 2004; Hand, Prain, & Yore, 2001; Rudd, Greenbowe, & Hand, 2007).

Another instructional model to enhance argumentation in science comes from the work of Krajcik and colleagues (McNeill, Lizotte, Krajcik, & Marx, 2006; Moje et al., 2004) on project-based instruction in science. Krajcik and colleagues developed a "scientific explanation" framework to help middle school students construct scientific explanations (i.e., arguments) about phenomena. To make scientific explanations more easily accessible and practical for students, they adapted Toulmin's (1958) model of argumentation by breaking down the task of scientific explanation into the three components of *claim*, *evidence*, and *reasoning* (to justify why the evidence supports the claim). Studies by McNeill, Lizotte, and Krajcik (2005), McNeill et al. (2006) and McNeill and Krajcik (2007) have examined the efficacy of this model and the extent and nature of teacher modeling and scaffolding needed to enhance middle school students' ability to construct scientific explanations.

For the purposes of this chapter, a limitation of the research reviewed in this section is that most of the approaches to teaching argumentation focus largely on text production rather than text comprehension. The primary outcome measure was the quality of written responses to writing prompts rather than a standardized test of reading comprehension (see also Moje, 2007). In part, this is because of the difficulties researchers encountered in finding suitable measures to assess students' critical-reflective thinking about and around text and, in part, it is because

the focus of the research has been on writing-to-learn strategies. Nevertheless, in the absence of more direct studies of students' comprehension, this research provides a reasonable account of the extent to which dialogic approaches to instruction enabled students to internalize the schema for a well-formed argument and to acquire the disposition to reason critically and reflectively about text as well as other sources of information (cf. Reznitskaya et al., 2008).

Intertextuality

Intertextuality, arising from the juxtaposition of text in relation to other texts, is an important intellectual resource for making meaning (Lemke, 1992), and might be regarded as the sine qua non of dialogic approaches to teaching comprehension. Nevertheless, making connections across texts, at least in the sense of texts as written objects, seems to be rare in elementary classroom instruction (Short, 1992; Soter, Connors, & Rudge, 2008; Varelas & Pappas, 2006). Available research suggests that even adolescents in the higher grades seldom engage in intertextual processing when faced with the task of comprehending information from multiple texts (Goldman, 2004).

Most studies of intertextuality have involved students reading multiple passages for research tasks at a single point in time, and have focused on the nature of students' cognitive processing and representation of texts (e.g., Hartman, 1995; Wolfe & Goldman, 2005). There have been few studies investigating the classroom environments or instructional practices that promote intertextual connections, how the connections change over time, or their effect of the connections on students' comprehension (work on intertextuality is described in the edited collection of papers in Stuart-Faris & Bloome, 2004).

One recent program of research in this area is a series of studies by Pappas, Varelas and colleagues (Pappas, Varelas, Barry, & Rife, 2003; Varelas & Pappas, 2006; Varelas, Pappas, & Rife, 2006). They investigated the intertextual connections made by first- and second-grade students and their teachers in two classrooms during read-alouds of information books in an integrated science-literacy unit. The studies were part of a collaborative school-university action research project in which Pappas and Varelas worked with two teachers who taught a unit on States of Matter over the course of seven read-alouds. The instruction was dialogic in that it was content-rich, and involved many opportunities for hands-on explorations and extensive discussion in which teachers encouraged and valued students' ideas.

In each of the studies, the researchers conducted qualitative and quantitative analyses of the discourse of the read-alouds. In their first study, Pappas et al. (2003) developed a taxonomy of intertextual connections and examined the roles they played in supporting students' engagement with texts. They defined intertextual connections as instances where students or teachers attempted to make sense of a text being read or discussed by means of other texts that students and teachers instantiated in particular read-aloud sessions, where 'text' was defined broadly according to Wells (1999) as any "representation of meaning using a conventional symbolic system" (p. 378). Their taxonomy of connections included links to:

- written texts, other texts that were orally shared, other media, or prior classroom discourse (e.g., "We're going to read a book called 'Flash, Crash, Rumble, and Roll' and that one has some stuff about lightening");
- hands-on explorations in science (e.g., "Now ... one half of the class yesterday was up here in front of the class and we were heating up the teapot and we were seeing the exact same thing, right?");
- recounts of previous events that students or the teacher had experienced or heard about (e.g., "Last time I poured cold water in my plate ... cause ... I was gonna use my mom's water and I seen air coming up"); and

- implied generalized events that students or the teacher had experienced or heard about (e.g., “Like when you leave your milk, when you leave your milk for a long time in the refrigerator, it will become thick”).

Pappas et al. (2003) noticed that these intertextual links seemed to support students’ understanding and learning in a variety of ways. Particularly important was the epistemic role the intertextual connections played in supporting students’ tentative exploration of ideas raised by the texts. In a later study, Varelas and Pappas (2006) conducted an analysis focused on the learning opportunities afforded by the intertextual connections. They documented how the intertextual links made by students changed over time as they appropriated the language of science to talk about ideas from the texts. In another analysis, focused on the second-grade students’ discourse, Varelas et al. (2006) showed how the students made sense of important scientific concepts of evaporation, boiling, and condensation. The researchers identified the intertextual links that accompanied children’s acquisition of these concepts, and showed how the links provided opportunities for them to further their understanding of the concepts. Because of the nature of the design of these studies and the lack of outcome measures, it is impossible to tell whether the intertextual connections played a causal role in shaping students’ comprehension as the construct is conventionally defined and measured. Taken together, however, the studies provide a compelling case that intertextuality was instrumental in advancing students’ understanding and thinking about the texts.

There has been other recent research on the instructional conditions that promote intertextual connections. These include studies of literature discussions by Lenski (1999, 2001) and studies of storybook read-alouds by Sipe (1996, 1998, 2000, 2001). However, similar to the above studies, most have not included measures of individual students’ reading comprehension. In the few classroom studies that have assessed students’ comprehension across multiple texts (e.g., VanSledright & Kelly, 1998), intertextuality has been implicit rather than explicit in the analyses (see Goldman, 2004).

An agenda for future research is for instructional studies to focus explicitly on intertextuality and to include individual outcome measures. Both design experiments and traditional experimental studies are needed to examine the instructional conditions and practices that promote intertextual connections, how the connections change over time as students’ are enculturated into such practices, and the effects of the connections on students’ comprehension. We need to know more about the affordances of juxtaposing different types of texts and experiences and of alternative orderings of the texts and experiences for teachers’ and students’ engagement in intertextuality, and we need to know more about the roles played by the different types of intertextual connections.

IMPLICATIONS

We conclude by considering the implications of the dialogic turn in learning and teaching of reading comprehension for theory, research, and practice. For theory, a dialogic perspective calls into question the adequacy of some theoretical models of reading comprehension. For example, Kintsch’s (1998) construction-integration model provides an elaborate account of how readers comprehend a single text. Although it captures some of the dynamic aspects of knowledge construction and understanding, as described at the beginning of this chapter, it does not provide an entirely adequate account of how readers make sense of multiple texts and diverse sources of information. If the construction of meaning is a dynamic and context-sensitive process and meaning resides in the relations among diverse perspectives (cf. Bakhtin, 1981, 1986), then we need theoretical models of comprehension that provide an account of how readers construct

more elaborate and flexible representations of their understanding of text. One possibility for such a model is cognitive flexibility theory (Spiro, 2001), which provides an account of how readers construct a flexible, adaptive understanding of texts in terms of a “criss-crossing” of the topical landscape from multiple and diverse perspectives. Another possibility is a more multi-layered account of the mental representation formed in comprehension along the lines of the documents model proposed by Perfetti and colleagues (Britt, Perfetti, Sandak, & Rouet, 1999; Perfetti, Rouet, & Britt, 1999). The documents model is an extension of Kintsch’s construction-integration model that posits a layer of representation that captures the intertextual connections among multiple sources (Bråten, Strømsø, & Britt, 2009; see also Goldman, 2004). Theoretical models like these, that provide an account of the construction of meaning as a dynamic and relational process, are needed to capture the dialogic quality of comprehension.

For research, the jury is still out on the effects of some of the more dialogic approaches to comprehension instruction. The research on content-rich instruction is compelling in showing that it yields benefits both for students’ reading comprehension and their content knowledge. Research on this issue should continue to be a fruitful area of inquiry, particularly as researchers consider how to integrate comprehension instruction into more discipline-specific teaching in middle and high schools. By contrast, the research on discussion, argumentation, and instruction related to intertextuality is less convincing. There are not yet enough empirical studies of sufficient quality to conclude that these approaches might supplant explicit instruction in comprehension strategies. As we have indicated, there is consensus that instruction in small repertoires of comprehension strategies can produce robust benefits for students’ comprehension, especially for students with learning disabilities, and that the benefits can transfer to new texts and novel situations. If more dialogic approaches to teaching comprehension are to gain traction in classroom instruction, more and better research is needed concerning their impact on comprehension. It is especially important to show that discussions about text or instruction related to intertextuality can help foster the habits of mind to enhance comprehension of texts when students read independently.

Researchers studying more dialogic approaches to comprehension instruction should be encouraged to employ measures of comprehension that more adequately reflect the dynamic and context-sensitive nature of the construct. Much of the research reviewed under the heading of dialogic has employed traditional experimenter-developed and commercially available standardized assessments—involving immediate or delayed recall, reading for gist understanding, or comprehension of single, brief passages at one point in time. These kinds of measures restrict what researchers can say about the role of dialogic approaches in shaping students’ comprehension. As indicated in our review, some researchers have analyzed the students’ discourse in the context of discussion, argumentation, and so forth, in place of using individual outcome measures, in the hope that discursive practices provide a richer, more sensitive accounting of the quality of students’ understanding and interpretation of text. While this approach has merit, it is worth considering what kinds of individual outcome measures might best inform researchers and teachers about students’ understanding and learning in classrooms that include more dialogic experiences around text. The RAND Reading Study Group (2002) report called for new kinds of assessments that reflect the dynamic and context-sensitive nature of comprehension and Sweet (2005) recently reiterated this call. The research reviewed in this chapter suggests that we have a long way to go before such measures become a reality.

For classroom practice, dialogic approaches might provide more appropriate contexts for students to develop the automatic, fluid articulation of strategies necessary for generative and flexible comprehension. Just as encouraging students’ flexible application of comprehension strategies has been found to provide a vehicle for “coordinating dialogue about text” (Pressley, 1998, p. 120), so too the more dialogic approaches probably provide a natural vehicle for students’ use of strategies. Many scholars have noted that high-quality discussions create authentic

opportunities for students to use comprehension strategies such as prediction, summarization, imagery, or comprehension monitoring without much explicit instruction from the teacher (e.g., Almasi, 2002; Applebee et al., 2003; Reninger, 2007; Taylor, Pearson, Garcia, Stahl, & Bauer, 2006). Moreover, descriptions of the conduct of text-based discussions sometimes include recommendations to explain or highlight comprehension strategies (Kamil et al., 2008; Vogt, 1996; McKeown et al., 2009). Thus strategy instruction and the more dialogic approaches to instruction might be more closely linked in actual classroom practice and may complement, rather than compete with, each other. Research is needed on the intersections between the two “types” of comprehension instruction.

Dialogic approaches might also be more amenable to teachers wanting to incorporate strategies instruction into their teaching. Shortly before his death, Michael Pressley (2006) decried the lack of comprehension strategies instruction in U.S. elementary schools and expressed interest in making comprehension strategies instruction more appealing for teachers. Dialogic approaches to comprehension instruction might offer teachers ways of teaching strategies that are easier to implement and more sustainable in the classroom.

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